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**From:** Craig Bias [cbias@remwerks.com]  
**Sent:** 10/22/2020 6:58:47 PM  
**To:** Macchiarella, Thomas L CIV USN COMNAVFACENGCOM DC (USA) [thomas.macchiarella@navy.mil]; Robinson, Derek J CIV USN NAVFAC SW SAN CA (USA) [derek.j.robinson1@navy.mil]; Praskins, Wayne [Praskins.Wayne@epa.gov]; Liscio, Matthew P CIV USN NAVSEA DET RASO VA (USA) [matthew.liscio@navy.mil]; Edwards, Zachary L CIV USN NAVSEA DET RASO VA (USA) [zachary.edwards@navy.mil]; Stoick, Paul T CIV USN NAVFAC SW SAN CA (USA) [paul.stoick@navy.mil]  
**Subject:** RE: Discuss RESRAD Build and BRPG

My comments are in purple. Note on Action Item 4, I have verified that the EPA BPRG calculator is now working correctly with respect to decay and the term, t-res. It is not therefore necessary to spend time on a write-up.

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**From:** Macchiarella, Thomas L CIV USN COMNAVFACENGCOM DC (USA) <thomas.macchiarella@navy.mil>  
**Sent:** Thursday, October 22, 2020 12:18 PM  
**To:** Robinson, Derek J CIV USN NAVFAC SW SAN CA (USA) <derek.j.robinson1@navy.mil>; Praskins, Wayne <Praskins.Wayne@epa.gov>; Liscio, Matthew P CIV USN NAVSEA DET RASO VA (USA) <matthew.liscio@navy.mil>; Edwards, Zachary L CIV USN NAVSEA DET RASO VA (USA) <zachary.edwards@navy.mil>; Stoick, Paul T CIV USN NAVFAC SW SAN CA (USA) <paul.stoick@navy.mil>; Craig Bias <cbias@remwerks.com>  
**Subject:** RE: Discuss RESRAD Build and BRPG

Looks good Derek, I included a few notes below.

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**From:** Robinson, Derek J CIV USN NAVFAC SW SAN CA (USA) <derek.j.robinson1@navy.mil>  
**Sent:** Thursday, October 22, 2020 9:33 AM  
**To:** Praskins, Wayne <Praskins.Wayne@epa.gov>; Liscio, Matthew P CIV USN NAVSEA DET RASO VA (USA) <matthew.liscio@navy.mil>; Edwards, Zachary L CIV USN NAVSEA DET RASO VA (USA) <zachary.edwards@navy.mil>; Macchiarella, Thomas L CIV USN COMNAVFACENGCOM DC (USA) <thomas.macchiarella@navy.mil>; Stoick, Paul T CIV USN NAVFAC SW SAN CA (USA) <paul.stoick@navy.mil>; 'Craig Bias' <cbias@remwerks.com>  
**Subject:** RE: Discuss RESRAD Build and BRPG

Here is what I wrote down with respect to action items. Please make any changes and send back by COB today. I plan on sending this to the group.

General summary –

The Navy and EPA are both going to evaluate some specific technical items and get back to the group (listed in action items below).

The Navy and EPA are both questioning the CSM for HPNS and will discuss if it needs to be changed to better represent actual site conditions.

The Navy uses RESRAD and believes that it is the appropriate tool to use - industry accepted and provides an accurate evaluation of risk and cleanup numbers.

The EPA uses BPRG and believes that it handles dust correctly. EPA cannot support RESRAD for dust because it may handles dust differently than the BPRG calculator.

The Navy believes that the BPRG calculator is overly conservative wrt risk from dust, providing numbers that are not achievable and not indicative of reasonable risk.

The EPA will re-evaluate the Navy's risk numbers with updated inputs after discussions and will provide proposed cleanup values. Should this be, "EPA will update inputs to BPRG and provide Navy with updated protective values" ??

Action Items:

1. EPA and Navy – discuss internally the CSM to determine if dust should be considered at HPNS. Maybe a lower removable fraction is appropriate. (more discussion below). Meeting with both parties by Oct 30 to agree on CSM.
2. EPA - evaluating two BPRG inputs and will get back to the Navy by Oct 30 (1. Loss of Radon and 2. Use of non-zero dissipation factor)
3. Navy – will send RESRAD method for converting dose to risk to EPA by Oct 30
4. Navy – will write up our understanding of how decay is handled in BPRG and send to EPA – Oct 30
5. EPA – will send the updated factors from 2017 guidance to Navy – Oct 22

#### **CSM –**

**Source of contamination** - Navy activities in buildings that used radiological constituents have ceased (i.e., the source of contamination is not replenishing). Durable cover eliminates outside soil as replenishing source of indoor contaminated dust.

**Remedial activities** – Surfaces undergo gross cleaning prior to survey, thus, surveys are measuring residual fixed radioactivity rather than contaminated dust. The results are compared to the current RGs and resultant risks are only from potential external exposures. Modeling to assess risk at the current RGs should either eliminate the ingestion pathway or model ingestion at a fraction (e.g., 20%) of the current RGs. ~~The Navy uses scanning equipment to measure gross fixed activity on a surface and remediates to the lowest remedial goal level for the radiological COCs. The removable fraction (if any) should represent all constituents being remediated to the lowest RG.~~

**Future exposure** - Industrial buildings will not house residential as is. Any future residential occupancy would by its very nature remove the potential for remaining contamination to expose residents to dust from Navy activities. NOTE for Navy reviewers: We need to ensure this concept doesn't go down the path of an engineering control or future remedy by others. The point must be made that we are talking about an incomplete exposure route, versus future encapsulation. A reasonable removable fraction is probably a safer approach than having to justify zero dust.